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NOTICE OF ALLOWANCE AND FEE(S) DUE

167

7590

12/17/2010

FULBRIGHT AND JAWORSKI LLP
555 S. FLOWER STREET, 41ST FLOOR
LOS ANGELES, CA 90071

EXAMINER

HERNANDEZ, NELSON D

ART UNIT

PAPER NUMBER

2622

DATE MAILED: 12/17/2010

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,204	10/24/2003	Sukeyki Shinotuka	7272-131/ 10312233	2344

TITLE OF INVENTION: OUTPUT-COMPENSATING DEVICE AND METHOD OF AN IMAGE SENSOR

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	03/17/2011

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

167 7590 12/17/2010

FULBRIGHT AND JAWORSKI LLP
555 S. FLOWER STREET, 41ST FLOOR
LOS ANGELES, CA 90071

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/693,204 10/24/2003

Sukeyki Shinotsuka

7272-131/ 10312233

2344

TITLE OF INVENTION: OUTPUT-COMPENSATING DEVICE AND METHOD OF AN IMAGE SENSOR

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	03/17/2011

EXAMINER	ART UNIT	CLASS-SUBCLASS
HERNANDEZ, NELSON D	2622	348-308000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB-122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB-47; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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167	7590	12/17/2010	EXAMINER	
FULBRIGHT AND JAWORSKI LLP 555 S. FLOWER STREET, 41ST FLOOR LOS ANGELES, CA 90071				
			HERNANDEZ, NELSON D	
			ART UNIT	PAPER NUMBER

2622
DATE MAILED: 12/17/2010

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 1796 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 1796 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability**Application No.**

10/693,204

Applicant(s)

SHINOTSUKA ET AL.

Examiner

Nelson D. Hernández Hernández

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendments filed on 12/6/2010.
2. ☒ The allowed claim(s) is/are 23 and 26 (Renumbered as 1 and 2).
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☒ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: JP 2001-170263, JP 2001-330010, JP 2001-385276 and JP 2002-79681.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/Nelson D. Hernández Hernández/
Primary Examiner, Art Unit 2622

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on applications filed in Japan on April 27, 2001, September 20, 2001, November 13, 2001 and February 14, 2002 respectively. It is noted, however, that applicant has not filed a certified copy of the JO 2001-170263, JP 2001-330010, JP 2001-385276 and JP 2002-79681 applications as required by 35 U.S.C. 119(b).

Response to Amendment

2. The Examiner acknowledges the amended claims filed on December 6, 2010. **Claim 23** have been amended. **Claims 1-22, 24, 25 and 27-32** have been cancelled.

Allowable Subject Matter

3. **Claims 23 and 26 (Renumbered as 1 and 2 respectively)** are allowed.

4. The following is a statement of reasons for the indication of allowable subject matter:

5. **Regarding claims 23 and 26 (Renumbered as 1 and 2 respectively)**, the main reason for indication of allowable subject matter is because in the prior art of record, although Shinozuka et al. disclose a method of compensating for the outputs of a number of light sensor circuits (See fig. 1) of an image sensor (See fig. 5), each light sensor circuit representing a unit pixel and working by producing in a photoelectric converting element a sensor current proportional to a quantity of light falling thereon and

converting the current into a voltage signal by using a sub-threshold region characteristic of a transistor (Fig. 1: QD1) having a logarithmic output characteristic in a weak inverse state and outputting a sensor signal corresponding to the converted voltage signal (See US Patent 6,909,462, col. 7, lines 19-65), and Chen et al. teach an output compensation device and method for an image sensor (See fig. 4: 401) using a number of light sensor circuits (See fig. 1) each representing a unit pixel and capable of producing in a photoelectric converting element a sensor signal proportional to a quantity of light falling thereon (Col. 3, lines 44-67), wherein a photodetector (PD) is connected to the source of a reset transistor (RES), the output compensating device further provides means (charge pump circuit 200 and level shift circuit 204 as shown in fig. 2, also Chen et al. teaches that chip 400 in fig. 4 also provide supply voltage VDD) for enabling the image sensor to previously set a drain voltage (VDD voltage supplied by the chip 400) of the transistor of each light sensor circuit to a value (i.e. 3.3V, col. 5, lines 4-11) at which a sensor signal obtained by conducting the transistor with its gate voltage changed to a value higher (i.e. 5V, col. 5, lines 4-11) than a normal value may correspond to a sensor signal obtainable in a dark state of the light sensor circuit with the normal gate voltage of the transistor when taking video (It is noted that in Chen et al., by increasing the gate voltage of the reset transistor, the generated signal would correspond to sensor signal obtainable in the dark state when taking video since the signal generated is the same signal as the drain voltage which would represent the amount of signal when no light is received). This teaches that the signal which corresponds to a sensor signal obtainable in a dark state of the light sensor circuit with the normal gate voltage of the transistor when taking video. See col. 4, lines 1-62), and

thereafter (Noting that the increase of the gate voltage occurs while the drain voltage is being applied, which teaches that the increase of the gate voltage occurs after the adjustment of the drain voltage) perform compensation for variations in output of each pixel signal by using a sensor signal obtainable from the light sensor circuit by changing the gate voltage of the transistor with the preset drain voltage to a value higher than the normal value for taking video (Chen et al. teach that the gate voltage is increased to allow the imager to sense the same exact drain voltage during the reset phase so that mismatch effect of the reset transistor will not produce fix pattern noise during the readout operation (Col. 4, lines 1-62), which teaches thereafter performing compensation for variations in output of each pixel signal by using a sensor signal obtainable from the light sensor circuit by changing the gate voltage of the transistor with the preset drain voltage to a value higher than the normal value for taking video as claimed since the gate voltage during capture of the image would be lower than during a reset period to allow the reset transistor to be in a high impedance mode), the teaching of Shinozuka et al. and Chen et al., either alone or in combination, fails to teach or reasonably suggest, including all the elements of the present claim, that the gain-compensation for variations in bright-state output levels of pixel signals is performed by using sensor signals obtainable by changing the gate voltage and the drain voltage of the transistor with shut-off incident light to the photoelectric converting element to values lower than the normal values for taking video, which signals correspond to sensor signals obtainable in a bright state for taking video.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson D. Hernández Hernández whose telephone number is (571)272-7311. The examiner can normally be reached on 9:00 A.M. to 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nelson D. Hernández Hernández/
Primary Examiner, Art Unit 2622
December 11, 2010